ANNUAL ADMINISTRATIVE REPORT (FY2002) AND
WORK PLAN (FY 2003) FOR INVENTORIES AND VITAL SIGNS MONITORING

FY2002-FY2003

COASTAL AND BARRIER NETWORK

Assateague Island National Seashore (ASIS), Cape Cod National Seashore (CACO), Colonial National Historical Park (COLO), Fire Island National Seashore (FIIS), Gateway National Recreation Area (GATE), George Washington's Birthplace National Monument (GEWA), Sagamore Hill National Historic Site (SAHI), and Thomas Stone National Historic Site (THST)

Coastal and Barrier Network Approval Signatures

Maria Burks, Superintendent, Cape Cod National Seashore, Date
Representative-Network Board of Directors

Elizabeth Johnson, Northeast Region Inventory and Monitoring Coordinator,Date

---

Prepared by: Sara Stevens and Bryan Milstead, Network staff, Date

I. Overview and Objectives

In December 2001, the Northeast Coastal and Barrier Network (NCBN) Inventory Study Plan was submitted to WASO and the Network received funds in FY02 to begin implementing inventories on vertebrate and vascular plants in network parks. The focus of the plan was to address inventory gaps in existing in the Network parks. Cooperative agreements were established to complete much needed inventories on mammals, birds and herps at Colonial National Historical Park (COLO), George Washington Birthplace National Monument (GEWA) and Thomas Stone National Historic Site (THST). The Network is working with scientists from the College of William and Mary, Frostburg University and the University of Richmond, to complete these inventories. This year the Network will review information that was compiled as part of a data mining project funded in FY02 for Assateague Island National Seashore (ASIS), Fire Island National Seashore (FIIS) and Gateway National Recreation Area (GATE) to help further identify vertebrate and vascular plant inventory needs.

Developing vegetation maps for the Network parks is well underway, with a number of new cooperative agreements being established in FY02. The FIIS vegetation map was completed and reviewed and cooperative agreements established this year with the NY Natural Heritage Program, to develop vegetation maps for GATE and SAHI. Maps for COLO, THST and GEWA are in various stages of development. The Network is cooperating with the Virginia Division of Natural Heritage to conduct the field classification portions of the mapping for COLO and GEWA. Chris Lea, an ecologist from ASIS on detail to the Network, is conducting the field classification for THST. North Carolina State University will conduct the GIS component for all three parks.

Product specifications have been written and included in each new cooperative agreement for biological inventories. These specify formats for deliverables, such as; FGDC compliant metadata for all spatial data sets, FGDC Biological Profile for all biological data sets, and relational databases in MS Access. Network staff have assisted with, as well as developed relational databases for cooperators working on biological inventories to assure quality products at the completion of each project.

Legacy data continues to be compiled and entered into the three WASO databases, NPSpecies, NatureBib and the Dataset Catalog. The NPSpecies database for each Network park will be verified and current by December 2002. Taxonomic experts have been identified to review NPSpecies for some of the parks in the Network and that work will continue in 2003, once each park's database is completed. The cooperative agreement with Penn State University (PSU) to update NatureBib for the four Northeast Region Networks, including the Coastal and Barrier Network has been extended. The research associate from PSU hired to correct and update NatureBib has been visiting each park to search for new documents and update existing information.

FY02 was the second year the Coastal and Barrier Network received funding for its Vital Signs Monitoring Program. The Network also received $90,000 from the Water Resource Division to continue the development of a water quality monitoring program. Two permanent staff were hired, a Network Coordinator and Data Manager, as well as two

staff at ASIS to backfill for ASIS staff detailed to work on Network issues. A number of cooperative and interagency agreements were established this year to begin projects developed by working groups defined by the Network's Technical Steering Committee that met in 2001. These include a data-mining element for specific issues in the Network's monitoring program such as contaminants, estuarine nutrient enrichment, shoreline change, visitor impacts and species and habitats monitoring. A plan for shoreline change monitoring, and a proposal to begin testing a protocol for monitoring salt marsh communities that was developed for CACO long-term monitoring program, was accepted and funded.

In June 2002, a joint meeting was held at the University of Rhode Island for the Network Technical Steering Committee, Board of Directors, park and I&M staff, and Network cooperators. This meeting provided an update on network projects, as well as an opportunity for cooperators to interact with members of the Technical Steering Committee and Board of Directors. New I&M staff members were introduced and all Network cooperators were asked to attend and present their projects. A second meeting of the Board of Directors was held via teleconference in July 2002 to update the members on the program's progress to date and to make a number of decisions on further refining the role and function of the Board through the Network Charter.

October 1, 2002, the Network's Phase I plan for monitoring was submitted to WASO for review.

Objectives for Biological Inventories

1. Compile existing data on vertebrate and vascular plants and enter this information into NPSpecies, NatureBib and the Dataset Catalog.
2. Document 90% of vertebrate and vascular plant species in the parks through targeted field investigations.
3. Develop relational databases for biological inventories following the MS Access database template.
4. Complete vegetation mapping for the Network parks.
5. Contribute to general management planning in Network parks.
6. Compile Paleo Resource data for Network parks.
7. Compile existing GIS layers for Network parks.

Objectives for Vital Signs Monitoring

8. Develop an issue-based, Network Vital Signs monitoring program.
9. Review and assess Network staffing needs.
10. Hold scoping and program review workshops for identified monitoring components.
11. Develop a Network water quality monitoring plan.

II. Accomplishments (FY2002) and Scheduled Activities (FY2003)

A. Biological Inventories

Objective 1 – Compile and enter existing data on vertebrate and vascular plants and enter into NPS Databases (all parks).

Task 1.1 – The NPSpecies Database.

- FY 2002 Accomplishments: (1) NPSpecies was managed under a cooperative agreement with the University of RI. Existing records in the NPSpecies database were verified and corrected in association with the original hard copy documents for FIIS, CACO, GEWA, THST and SAHI. This included verifying each species with its associated reference, identifying species in the database not referenced and removing them, addition or removal of documented common or scientific names, and adding location information, abundance and nativity information. Spelling errors were corrected, and new data, gathered in 2001/2002 were entered. (2) A metadata form for NPSpecies was developed to use with the Network's database to track changes made to each park database. (3) NPSpecies training was conducted for one day at CACO for park staff handling the park's NPSpecies database and expert review. (4) NPSpecies training was conducted for Penn State University staff, a cooperator working on Northeast Region network NPSpecies databases. (5) Bird, mammal and herp experts are reviewing CACO's NPSpecies database. (6) Under an Interagency Agreement with Patuxent Wildlife Research Center, Dr. Allan O'Connell searched museums for vertebrate (non-fish) and vascular plant vouchers to populate NPSpecies and assist with identifying data gaps. The final report and database was completed in May 2002. A total of 851 voucher specimens were identified as being collected within the park boundaries of ASIS, CACO, FIIS, GATE and SAHI. Another 2,551 specimens were identified as likely to have been collected within the boundaries of these five parks. (7) A Research Assistant was hired from the College of William and Mary to enter 1600 plant voucher specimens from COLO into NPSpecies.
- Scheduled FY 2003 Activities and Products: (1) Develop regional NPSpecies guidelines for cooperators and park staff to ensure data entry standardization. (2) Provide NPSpecies training to park staff at COLO, GEWA, ASIS and THST. (3) Data management staff will spend approximately 1-3 months gathering data collected in 2002 from Network parks and entering them into NPSpecies and other appropriate NPS databases. (4) Hire taxonomic experts to continue the review of park NPSpecies databases for the Network. (5) Hire part-time staff from the College of William and Mary to enter data into the COLO NPSpecies database under the supervision of natural resource management at COLO. (6) Enter and verify existing data in NPSpecies for ASIS and GATE and enter any new data sets. (7) Les Mehrhoff continues to evaluate plant data in NPSpecies under a cooperative agreement with University of Connecticut for CACO, GATE, FIIS and SAHI and other Northeast parks. Dr. Mehrhoff is an expert on exotic plants and curator of the herbarium. He will check the plant lists to determine if 90% have been documented by consulting local flora and published literature.

Task 1.2 – The NatureBib Database.

- FY 2002 Accomplishments: Under cooperative agreement with Penn State University, Scott Tiffney, a science librarian, visited ASIS, FIIS, SAHI and GATE to search for new documents, make corrections to existing databases and update the NatureBib database for each of these parks. Many new records were added: 963 for ASIS, 944 for FIIS, 39 for SAHI, and 709 for GATE. The scope of work for this update project included all original and copy cataloging of records not previously entered into the existing NatureBib databases relating to the natural resources of each park according to the bibliographic standards established by NPS NatureBib Committee. In order to locate new records for inclusion into each park database, update work included visits to the parks, as well as searches of, and/or visits to local, state, and federal public, private, educational, and governmental libraries and repositories. Online databases and resources were also searched for relevant natural resource information via the Internet or locally. Also included in this updating was the editing of the existing records for duplication, authority control, and data enhancement due to multiple source, non-NatureBib originated cataloging.
- Scheduled FY 2003 Activities and Products: The cooperative agreement with Penn State University will continue into FY03. Scott Tiffney will visit CACO, GEWA, THST and COLO and update each park's bibliography.

Objective 2 – Document 90% of vertebrate and vascular plant species in the parks through targeted field investigations. (all parks)

Task 2.1 – Mammal inventories (COLO, THST, GEWA, SAHI, ASIS)

- FY 2002 Accomplishments: (1) Under a cooperative agreement with Dr. Ron Barry at Frostburg University to conduct mammalian inventories COLO, THST, and GEWA, historical records of mammals in these three parks were obtained, strata within each park was outlined, ground-truthed and sampling sites established. (2) SAHI was included in an interagency agreement established in FY02 with USGS, Alan O'Connell, to inventory mammals in all the Northeast Temperate Network parks.
- Scheduled FY 2003 Activities and Products: (1) Receive first progress report from Dr. Ron Barry at Frostburg University on mammal inventories at GEWA, THST, and COLO. March-November 2003, the second year of fieldwork will be conducted in the three parks. (2) Mammalian inventory fieldwork will begin in 2003 at SAHI by Alan O'Connell, USGS. (3) Hold scoping meeting for mammal inventory at Assateague, develop a scope of work, identify Cooperator and establish a cooperative agreement. (4) Identify cooperator to conduct mammal inventories at FIIS and GATE, establish cooperative agreement.

Task 2.2 – Avian inventories (COLO, THST, GEWA, ASIS, SAHI)

- FY 2002 Accomplishments: (1) A cooperative agreement was established with Dr. Dana Bradshaw at the College of William and Mary, Center for Conservation Biology to inventory avian species at COLO, THST and GEWA. As part of this agreement, the center will compile and review existing avian species data for ASIS, enter them into NPSpecies, and make recommendations for further avian inventory work needed in the park. Historical records research and compilation will begin in 2002 as well as a

review of digital imagery site set-ups. A survey plan will be completed by December 2002, which will include GPSed sampling points. Staff from William and Mary are currently meeting with individual park contacts. Field and data techs are being hired. (2) A cooperative agreement was established with the Theodore Roosevelt Sanctuary and Audubon Center in Oyster Bay , NY to inventory avian species at SAHI.

- Scheduled FY 2003 Activities and Products: (1) Jan – March 2003winter bird surveys will be conducted by the College of William and Mary at COLO, GEWA and THST. April – July 2003spring migration and breeding season surveys will be conducted and August – Nov 2003strip transects will be established and GPSed and fall migration surveys will be conducted in the three parks. (2) Compilation of ASIS avian species data will continue and a final report will be submitted in the fall of 2003. (3) Field work will begin at SAHI in March 2003, by the Theodore Roosevelt Sanctuary and Audubon Center staff. A progress report will be submitted on or before April 30, 2003. The report will include an expected species list for SAHI, and status of field reconnaissance and fieldwork to date. (4) Write scope of work to compile existing avian species data for FIIS and GATE that includes identifying inventory gaps. Identify cooperator for this project and establish cooperative agreement.

Task 2.3 – Herpetological inventories (COLO, THST, GEWA, GATE, SAHI, FIIS, ASIS)

- FY 2002 Accomplishments: (1) Through a cooperative agreement established in FY01, Dr. Joe Mitchell from the University of Richmond began fieldwork to inventory amphibian and reptiles at COLO, GEWA and THST. (2) Field work was conducted at SAHI, FIIS and GATE as part of a cooperative agreement with the Wildlife Conservation Society that was established in FY00-FY01 to inventory amphibian and reptiles in some of the Coastal and Barrier Network parks as well as parks in the Northeast Temperate Network. (3) Additional distribution and abundance sampling for species of concern was also conducted at GATE by Russell Burke, Hofstra University.
- Scheduled FY 2003 Activities and Products: (1) Draft final technical reports will be submitted by Dr. Joe Mitchell from the University of Richmond for the herpetological inventories conducted at COLO, GEWA and THST between December 2002 and March 2003. (2) Additional funding will be added to the cooperative agreement with the Wildlife Conservation Society to continue fieldwork at GATE. The PI's working on this project have requested additional funding and time for this project because of the very poor field conditions due to the 2002 drought. (3) A final report will be submitted by Russell Burke on the Diamondback Terrapin work he conducted at GATE (Sandy Hook) in 2002. (4) Hold scoping meeting for herpetological inventory at Assateague, develop a scope of work, identify Cooperator and establish a cooperative agreement.

Task 2.4 – Vascular Plant inventories (THST)

- FY 2002 Accomplishments: (1) Brent Steury, NCPE Botanist completed a floristic inventory at THST and submitted a final report in July 2002. His report included field notes on butterflies, dragonflies, and birds, reptiles, and amphibians as well.

- Scheduled FY 2003 Activities and Products: No vascular plant inventories planned at this time.

Task 2.5 – Estuarine and freshwater fish inventories (CACO, FIIS, GATE)

- FY 2002 Accomplishments: (1) A draft final report and data were submitted as part of a cooperative agreement established in FY99 with the University of Mass, Amherst, Dr. Martha Mather. This agreement included a freshwater fish inventory (including distribution and abundance) at CACO and other parks in the Northeast Temperate Network. Park and regional I&M staff have reviewed the data and report, met with Dr. Mather and recommended changes to be submitted in the final report

- Scheduled FY 2003 Activities and Products: (1) Write scope of work to compile existing fisheries data for FIIS and GATE. Identify cooperator for this project and establish cooperative agreement.

Task 2.6 – Odonate inventories (THST, FIIS, GATE)

- Scheduled FY 2003 Activities and Products: (1) Write scope of work to conduct Odonate inventories at THST, GEWA, ASIS, FIIS and GATE. Identify cooperators and establish cooperative agreements.

Objective 3-Develop MS Access relational databases based upon the database template for NCBN biological inventories.

Task 3.1 – Mammalian inventories (COLO, GEWA, THST)

- FY2002 Accomplishments: (1) A relational database was developed for mammalian inventories in cooperation with Ron Barry, Frostburg University.
- Scheduled FY 2003 Activities and Products: (1) Relational databases based on the database template will be developed for both herpetological and avian inventories being conducted at COLO, THST and GEWA.

Objective 4- Complete vegetation mapping for the Network parks

Task 4.1 – Vegetation mapping-COLO, GEWA, THST

- FY2002 Accomplishments: (1) Additional funding was added to a current contract with Kucera, Inc. to take aerial photos of COLO, GEWA and THST. Because of September 11th attack on the World Trade Center, Kucera was unable to fly THST in the fall of 2001. (2) An amendment to an existing cooperative agreement with North Carolina State University (NCSU), Hugh Devine, was established to conduct vegetation mapping at COLO, GEWA and THST. NCSU will be handling the GIS/mapping portion of the project and will work with VA Natural Heritage Program staff that will be conducting the fieldwork. Completed products for GEWA and COLO include: leaf-on and leaf-off photography quality checked and scanned (GEWA~47 photos, COLO~606 photos); photo mosaics of the leaf-on and leaf-off photography are complete for both parks; preliminary, formation-level vegetation maps are complete; and fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map and to collect fire fuel load is complete for GEWA and initiated for COLO. (3) A second phase of this project includes developing protocols for mapping fire fuel loads using the 1:6,000 scale leaf-off aerial photography used for creating vegetation maps. Preliminary tasks include collecting

fuel load data at parks using Brown's transects and other appropriate field protocols. This fieldwork is being carried out concurrently with the fieldwork required to assess positional accuracy of the orthophoto mosaics and thematic accuracy of the vegetation maps. Fire fuel load data using Brown's transects was collected at GEWA and initiated at COLO, summer 2002. (4) Spring 2002, the Virginia Division of Natural Heritage (VADNH) began the first of three field seasons of work on a project to classify and map the vegetation of seven park units in Virginia. Two parks in the Coastal and Barrier Network (COLO and GEWA) were included in this agreement, as well as five Mid-Atlantic Network parks (APCO, BOWA, FRSP, PETE, and RICH). As of August 2002, VADNH Ecologists have begun work in six of the seven parks, sampling vegetation communities and evaluating the photo interpretation completed to date. During these field visits, VADNH Ecologists have documented several new examples of interesting natural communities and several potential county distributional records for plant species, including one for GEWA. (5) Chris Lea completed and submitted a draft report on the vegetation classification of THST. (6) Mike Bradley from the FTSC at URI investigated the availability of existing photography/orthophotography for GATE, and SAHI and evaluated their use for the vegetation mapping program for the parks. Mike's list was added to the descriptive list developed by Greg Bonynge (URI-EDC) on existing sources of aerial photography. He conducted QA/QC (including hard copy maps, cds, GIS data, and metadata) and the final review and report of FIIS vegetation mapping products from VA Tech. Mike did develop initial contacts and initial background work on the relationship between NPS and USFS for aerial photo acquisition (Bill Frament) and conducted all of the prep work for aerial photography missions including assembling quad maps and park boundary information for USFS. Mike is also developing draft specifications/protocol for QA/QC review of vegetation mapping products (veg map checklist and protocol document) which is currently under review by Mike Story

- Scheduled FY 2003 Activities and Products: (1) The Virginia Division of Natural Heritage will complete the second year of a three year field season to classify and map the vegetation of seven park units in Virginia, including COLO and GEWA, two NCBN parks. (2) Fieldwork to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map and to collect fire fuel load will be completed for COLO by NCSU. (3) NCSU will create photo mosaics of both leaf-on and leaf-off photography for THST, a preliminary formation-level vegetation map will be completed, and fieldwork will be conducted to assess positional accuracy of the mosaics and thematic accuracy of the vegetation map and to collect fire fuel load data. Chris Lea will work with NCSU to develop an alliance level map for THST as well as finalize the classification and key. Nature Serve will crosswalk the classifications developed by the VA Natural Heritage Program and Chris Lea, to the National Vegetation Classification.

Task 4.2 – Vegetation mapping-GATE, SAHI

- FY2002 Accomplishments: (1) An interagency agreement was established with the USDA Forest Service, State and Private Forestry to complete aerial photography for GATE and SAHI as well all the Northeast Temperate Network parks except ACAD and MORR. William Frament, remote sensing specialist, will develop flight plans,

acquire photography, check photography for quality assurance, acquire scanned images, check scanned images for quality assurance and produce digital orthophotos for selected parks based on available funding. (2) The NPS Northeast Region Field Technical Support Center (FTSC), URI, with comments from the included parks, provided ArcView shape files of areas to be flown indicating park boundaries and reviewed flight plans, photography and other deliverables under this agreement. Before selecting USFS as a cooperator, North Carolina State University reviewed existing products created by this USFS group, recommended improvements, and developed specifications for the interagency cooperator. FTSC staff at URI searched for available photography and orthophotography less than 5 years old and collection and posting of shape files. (3) A cooperative agreement was established with the New York Natural Heritage Program, to complete a vegetation map for New York parks in the Northeast Temperate and two Coastal and Barrier Networks (GATE, SAHI).

- Scheduled FY 2003 Activities and Products: (1) GATE will be photographed in the fall of 2002, and SAHI the spring of 2003. (2) NCState University will review photography and orthophoto products. (3) The New York Natural Heritage Program will utilize recent aerial photos and digital imagery to locate, identify, and map the plant communities of these areas, gather and analyze plant community data to develop a community classification for each park, create maps of the plant communities present, provide attribute data (including plant species, cover, soil types, etc.), and assess the accuracy of the original mapping using Accuracy Assessment Protocols and refining the maps as necessary. (4) An amendment to the NatureServe cooperative agreement will be developed to crosswalk the New York Natural Heritage Program vegetation classification to the national classification

Task 4.4 – Vegetation mapping-ASIS

- Scheduled FY 2003 Activities and Products: (1) The existing vegetation map and classification for ASIS will be revised to meet the National Vegetation Mapping Program standards. Chris Lea will lead this effort. A cooperator will be identified to complete the GIS component of this project.

Task 4.4 – Vegetation mapping-CACO

- FY2002 Accomplishments: (1) Funding to develop a vegetation map for CACO, was provided by the NPS Vegetation Mapping Program, through the Northeast Region I&M program. An existing cooperative agreement with NatureServe was amended for finalization of the regional classification system, field sampling, data analysis and preparation of the final map. Further accomplishments and scheduled activities are addressed in the CACO prototype report.
- Scheduled FY 2003 Activities and Products: (1) Provide assistance with the final review of the CACO vegetation map products, due to be completed in FY03.

Task 4.5 Assist in the development of standards for vegetation map review and assessment (All parks)

- Scheduled FY 2003 Activities and Products: (1) Various components of the veg mapping process have been funded for 34 of 38 parks in the Northeast Region. The

FIIS vegetation map is in final review and others will soon follow. Development of a standard review protocol is needed. An initial meeting was held in Luray, VA during the veg mapping training session to discuss gaps in veg mapping guidelines, to identify parties responsible for review of spatial data, ecological data and the classification and keys.

Task 4.6 - Provide training in vegetation mapping (All parks)

- Scheduled FY 2003 Activities and Products: (1)Funding to organize a training session for Northeast Region and National Capital Region was provided through the Northeast Temperate Network by the vegetation mapping program. NatureServe was hired to develop the course materials, hire staff to attend and teach. The training was held in October in Shenandoah National Park. Two days were classroom session and one day of fieldwork. Various side meetings every evening completed the educational opportunity for many attendees as we reviewed completed vegetation mapping products for FIIS and VAFO. Sixty people attended. Presentations will be posted to the Coastal and Barrier Network website in the future.

Objective 5: Contribute to general management planning in Network parks.

- FY2002 Accomplishments: (1) A proposal developed by senior scientists in the Northeast Region was submitted and funded by the WASO planning office. The purpose of this proposal is to synthesize and interpret existing natural resource information and studies to better inform park planning at FIIS. FIIS is scheduled to begin its GMP in 2004/5. Northeast Region I&M staff at URI, have begun to compile and summarize existing natural resource data to assist with this process.
- Scheduled FY 2003 Activities and Products: (1) Northeast Region I&M staff will continue to assist regional scientists, CESU staff, park staff and planners to meet the following goals of the proposal mentioned above: identify and review existing natural resource studies and data sets for FIIS; analyze, consolidate and synthesize this information in a manner that portrays the historical and existing park ecosystem(s) and identifies the natural resource characteristics and conditions in the context of each park's purpose and mission; identify issues and opportunities that should be addressed during the GMP process; identify critical gaps in the knowledge base which must be addressed prior to initiating the planning process; identify and map (GIS) usable natural resource data to better inform the GMP process; present the results of this work to park planners and managers in a way that is understandable and useable in the park planning and management process(s); and identify a cadre of knowledgeable natural resource professionals that would continue in an advisory role during each park's planning process.

Objective 6: Compile Paleo Resource data for Network Parks (All parks)

- Scheduled FY 2003 Activities and Products: Compile existing data on Paleo Resources in the Network parks. This will include a bibliographic search, a Dataset Catalog containing metadata on existing Paleo Resource data, and a final report.

Objective 7: Compile existing GIS layers for Network parks. (All parks)

- Scheduled FY 2003 Activities and Products: Organize and compile existing GIS layers for all Network parks to make more easily available to Network staff and cooperators. Develop a Dataset Catalog for the existing data sets.

B. Vital Signs Monitoring

Objective 6: Develop an issue-based, Network Vital Signs monitoring program.

Task 6.1 – Development of a Network Shoreline Change monitoring component (FIIS, GATE, SAHI, GEWA, COLO, ASIS, CACO)

- FY2002 Accomplishments: (1) Executed cooperative agreement with USGS St. Petersburg for the processing and delivery of existing LIDAR data sets for ASIS, CACO, FIIS, GATE (SH), and GEWA. (2) Renewed existing cooperative agreement with USGS St. Petersburg for additional LIDAR surveys and the development of value added products from existing and future surveys (. e.g. dune features, edge of vegetation, rectification of co-incident aerial photographs). (3) Planned and scheduled Fall 2002 (FY03) LIDAR surveys at ASIS, CACO, FIIS, and GATE (SH) including timing, area extent, and NPS logistical support to NASA air crew. (4) Developed draft data management plan including data standards and SOPs for network ocean parks using ASIS data as pilot. Funded NPS Geologic Resources Division SCEP employee for summer at ASIS to assist with this project. (5) Initiated activity to survey and assess analysis procedures for geomorphologic data sets with NPS GRD and URI EDC. Data included horizontal shoreline surveys, transect elevation profiles, and LIDAR beach topographic surveys. (6) Attempted but failed to finalize cooperative agreement with USGS BRD and URI EDC for continuation of shoreline surveys at CACO, FIIS, and GATE (SH) due to sudden death of PI. Agreement was also to cover compilation and documentation of historic shorelines for above-mentioned parks. (7) Arranged equipment loan with Trimble Navigation for use in NPS/NASA/USGS LIDAR surveys at CACO, FIIS, and GATE (SH). Demonstrated technical proficiency to NASA PI to allow NPS participation and field support for above stated LIDAR surveys. (8) Attended and presented overview and progress reports for network geomorphologic monitoring activity to: NPS regional, network, and park staff and cooperators (URI, June 2002); NPS Geologic Resources Division inventory scoping workshop. Chaired breakout session to develop map-able units for inventory (New Smyrna Beach, FL June 2002); NPS Chesapeake and Allegheny Cluster GIS annual meeting (Reston, VA May 2002). (9) Visited COLO and GEWA and met with park staff and cooperators to develop and refine critical indicators for estuarine systems in general and respective parks in particular. (10) Planned, scheduled, and coordinated NPS/NASA/USGS field research at ASIS to develop bald earth extraction, vegetation mapping, and bathymetric capability of new research LIDAR (EAARL) for future use in and beyond network parks. (11) Composed and submitted abstract regarding shoreline data collection, research, and monitoring to Coastal Sediments conference (Sep 2002).

- Scheduled FY 2003 Activities and Products: (1) Attended and co-coordinated geomorphologic change scoping workshop (URI Oct 2002). (2) Provided coordination and ground support for NPS/NASA/USGS LIDAR surveys at CACO

(10/7,8), GATE (SH) (10/17) and FIIS (10/18). (3) Present network geomorphologic monitoring overview and status reports to CACO LTEM Symposium (Nov 2002). (4) Compose and distribute geomorphologic scoping workshop report for review and comment (spring 2003). (5) Write position description for GIS/Geomorphology position (spring 2003). (6) Write paper for Coastal Sediments conference (see above). (7) Review, edit and revise draft data management plan for ocean parks (spring 2003). (8) Draft shoreline/geomorphologic protocol and submit for review and comment. (9) Present paper at Coastal Sediments Conference (Clearwater, FL May 2003). (10) Develop cooperative agreement with URI EDC for inventories of existing data. (11) Execute cooperative agreement with USGS St. Petersburg for delivery of 2002 LIDAR surveys and value-added products. (12) Re-institute and continue network sponsored GPS shoreline surveys at ocean parks (February 2003). (13) Plan, schedule, and coordinate NASA LIDAR surveys at COLO and GEWA (fall 2003). (14) Plan, schedule, and coordinate NPS/NASA/USGS field research at ASIS to develop bald earth extraction, vegetation mapping, and bathymetric capability of new research LIDAR (EAARL) for future use in and beyond network parks.

Task 6.2 – Development of a Network Saltmarsh monitoring component (FIIS, GATE, GEWA, SAHI, COLO, ASIS)

- FY2002 Accomplishments: (1) Species and Habitat data mining project, funded in FY01, identified Saltmarsh as a key habitat for monitoring in the Coastal and Barrier Network. (2) Two existing monitoring protocols, developed, tested and implemented as part of the CACO long-term monitoring program (*Monitoring Nekton in Shallow Estuarine Habitats and Monitoring Salt Marsh Vegetation)*, are being considered for the Network. These protocols have been successfully implemented in six Fish and Wildlife Refuges along the Atlantic Coast. Implementation in Network parks would allow coordination with USFWS refuges in implementing monitoring and comparing data. (3) A cooperative agreement with the University of Rhode Island was established to begin protocol development on saltmarsh vegetation and nekton community monitoring in the NCBN parks. The purpose of this project is to develop a sampling design, test protocols and determine a long-term implementation strategy.
- Scheduled FY 2003 Activities and Products: (1) Have the study plan reviewed by outside professionals and the Network Science Committee. (2) Complete an evaluation of existing saltmarsh habitats in all of the NCBN parks. (3) Establish study sites within three park units, and collect baseline data on saltmarsh vegetation and nekton communities for one year in each of these parks. (4) A summary report for these three parks will be submitted in FY03.

Task 6.3 – Development of a Network estuarine nutrient enrichment monitoring component (All parks)

- FY2002 Accomplishments: (1) An interagency agreement was established with the USGS to conduct Phase I data mining on existing nutrient enrichment monitoring in the Network parks and to identify candidate vital signs. (2) A draft report was submitted to the Network by the USGS and University of RI (URI) PI's in July 2002. This report identifies monitoring variables for regional testing that were selected by

assembling and synthesizing information from diverse sources, including technical workshops and meetings, existing programs, and site visits to North Atlantic parks. (3) An amendment to the cooperative agreement with the University of RI was established. This amendment funded Task 1 of a larger proposal to develop techniques to monitor potential sources of nutrients in park watersheds. Data on nutrient inputs will be compiled at ten year intervals back to 1970. (4) A proposal was submitted to the Network by USGS staff in conjunction with the URI proposal mentioned above. The USGS effort (Task 2) entails initial protocol development of candidate vital signs identified in the data mining process described above.

- Scheduled FY 2003 Activities and Products: (1) Establish an interagency agreement with USGS to fund Task 2 of the proposal mentioned above. (2) Have the proposal reviewed by outside professionals and the Network Science Committee. (3) Receive progress report from URI cooperators on Task 1 of project.

Task 6.4– Development of a Network monitoring component on contaminants (All parks)

- FY2002 Accomplishments: (1) Due to staffing changes, progress has been delayed on a proposal funded in FY01 to complete an "Environmental Contaminants Baseline Inventory" for network parks under a cooperative agreement with Keith Cooper, Rutgers University. The PI on this project has changed since this agreement was established, Dr. Mark Robson has taken Keith Cooper's place as PI. (2) A meeting was held at CACO that included Mark Robson, Nancy Finley (CACO) and Bryan Milstead (Network Coordinator) in the summer of 2002 to review the existing agreement and develop a new timeline for deliverables. The site visit and analysis of CACO was complete at that time.
- Scheduled FY 2003 Activities and Products: (1) A final report will be completed for all network parks that includes current baseline conditions of contaminants in the parks as well as the results of an examination of historic information that may indicate past source discharges, spills and deposition areas. (2) A conceptual model identifying agents of change, stressors and responses associated with contaminants in the Network parks, will be developed and submitted in March 2003, as well as recommendations for candidate vital signs.

Task 6.5– Development of a Network monitoring component on recreation and visitor use (All parks except CACO)

- FY2002 Accomplishments: (1) A two-phase proposal was submitted by Chris Monz, Sterling College and Yu-Fai Leung from North Carolina State University to begin the data mining process for the Network's visitor impact monitoring component. A cooperative agreement was established with Sterling College to fund Phase I. Jeff Marion, USGS and VA Tech., PI for the CACO prototype visitor impact component, is cooperating with Monz and Leung, on the Network project. (2) The first progress report was submitted in October 2002, that included information gathered during site visits to GEWA, THST, SAHI, ASIS and GATE, extensive meetings and interviews with these park's natural resource managers and field staff, and the initiation of a thorough literature review.
- Scheduled FY 2003 Activities and Products: (1) Site visits and meetings with NPS

park staff at COLO and FIIS will be completed in November 2002. Once these final site visits are added to the progress report, the report will be circulated to park managers for review. (2) A final report will be submitted in April 2003 as well as a revised proposal and budget to implement Phase 2, identifying vital signs and protocol development.

Task 6.6– Development of a Network monitoring component on species and habitats (All parks except CACO)

- FY2002 Accomplishments: (1) A cooperative agreement with the University of Rhode Island was extended to continue the employment of a research associate compiling existing information on species and habitat monitoring programs. Species and habitat monitoring going on in each Network park has been identified, as well as non-NPS programs that are or have been conducted along the Atlantic Coastal that pertain to Network parks. As part of this data mining project, a great deal of data was obtained from non-NPS sources with monitoring sites within park boundaries such as Breeding Bird Surveys and Christmas Bird Counts. These data has been entered into NPSpecies.
- Scheduled FY 2003 Activities and Products: (1) A final report will be prepared by January 17, 2003 and given to the Network Parks and the Technical Steering Committee for review. (2) A workgroup will be designated to assist the Network in developing options for monitoring species and habitats in the Network parks. (3) Seek non-NPS partners for the development of species and habitat monitoring protocols for Network Parks.

Task 6.6– Assess the utility of remote sensing methods for monitoring vegetation change, estuarine habitat conversion, and eelgrass density (FIIS)

- Scheduled FY 2003 Activities and Products: (1) Develop of Cooperative Agreement with Dr. Yeqiao Wang, (remote sensing specialist, University of Rhode Island), to assess the feasibility of monitoring habitat and vegetation components with remote sensing technology. (2) Initial work to be completed at FIIS because of recently completed vegetation map for the Island. (3) If successful, future work will expand the techniques to other Network parks.

Objective 7-Review and assess Network staffing needs, hire additional staff

- FY2002 Accomplishments: (1) A Network Coordinator and Data Manager were hired. (2) Chris Lea, an ecologist from ASIS, was detailed to the Network for 6 months to provide technical expertise for the network vegetation mapping program. His position was shared with the National Capital Network and both networks provided backfill to ASIS to replace Chris. (3) Mark Duffy, a GIS specialist from ASIS was detailed to the Network to manage the Shoreline Change component of the Network's monitoring program. Mark is detailed to the Network for 75% of his time. The Network provided backfill to ASIS for Mark's time. (4) During the July 2002 Board of Director's teleconference, the Board approved additional staffing options presented.
- Scheduled FY2003 Activities and Products: (1) Assess the need for the following Network positions (permanent/term), Aquatic Ecologist, GIS/Geomorphologist, Data

Management/Administrative Support, shared position-Data Manager with CACO (1/4 time Network/3/4 time CACO). (2) Review final positions and duty stations with Regional Coordinator and Board of Directors. Write crediting plans, advertise and hire staff.

Objective 8- Hold scoping and program review workshops for identified monitoring components.

- FY2002 Accomplishments: (1) A Shoreline Change scoping workshop was planned by Mark Duffy, Bryan Milstead, Rebecca Beavers and Howard Ginsberg. The intent being to establish a working group to review the Network's current program and make suggestions for improvements. Those invited have expertise in geomorphology, GIS, data management, and park management.
- Scheduled FY2003 Activities and Products: (1) Hold a shoreline change scoping workshop Oct 16 and 17, 2002 with the goal to: develop a team-oriented approach to geology/geomorphology in the Network parks; review existing indicators (Vital Signs) and develop or more clearly define additional indicators especially in bay and estuary environments; develop expert panel and assign short tasks for development of conceptual model outline; and discuss how traditional GPS and Survey based techniques will interface with emerging technologies such as LIDAR (Airborne Topographic Mapper and EAARL). A workshop report will be available by January 1, 2003. (2) Hold a scoping workshop on visitor impact monitoring in the NCBN parks. (3) Hold a scoping workshop for species and habitat monitoring in the NCBN parks. (4) Work with individual parks or regionally defined groups of parks to review the Phase I monitoring plan, assess progress towards meeting the goals of the Vital Signs Monitoring Program, determine relevance of identified monitoring components to park issues, identify gaps in the current strategy, and more clearly define specific questions to be addressed by the Vital Signs Monitoring Program.

Objective 9- Review the relevance of the Cape Cod Conceptual Framework for the development of Vital Signs monitoring in Network Parks.

- FY2002 Accomplishments: (1) The network works closely with the Cape Cod N.S. prototype park and has adopted their conceptual framework for the development of its Vital Signs Monitoring Program. (2) A consistent set of conceptual models are being developed for each monitoring protocol.
- FY2003 Activities and Products: (1) Meet with the science committee to review the CACO Conceptual framework. (2) Determine whether an integrative framework should be developed for the Network. (3) Form a workgroup to develop a Conceptual Framework specific to the Northeast Coastal and Barrier Network.

Objective 10- Develop a Network water quality monitoring plan

Task 10.1 Complete data mining on wetland and water quality issues for Network parks.

- FY2002 Accomplishments: In FY2001, a cooperative agreement was established with the University of RI (James-Pirri and Roman) to complete a two year project titled, "Wetland and Water Quality Issues for Parks of the Northeast US: A Scoping Report for the Coastal and Barrier Network". Products to be delivered include (1) A report summarizing threats. (2) An analysis of how threats are altering structure and

function of wetlands within the Network parks. (3). An evaluation of existing monitoring programs with suggestions for improvements. (4). A summary of information from state 305(b) and 303(d) reports that includes a discussion of Network needs to identify pristine as well as impaired waters in the network.

- FY2003 Activities and Products: (1) A final report and associated GIS map products will be completed by June 2003 and delivered to the network for review.

Task 10.2 Complete data mining on contaminants in Network parks.

- FY2002 Accomplishments: (1) Due to staffing changes, progress has been delayed on a proposal funded in FY2001 with the Network's WRD funding, to complete a baseline inventory on environmental contaminants for network parks under a cooperative agreement with Keith Cooper, Rutgers University. The PI on this project has changed since this agreement was established, Dr. Mark Robson has taken Keith Cooper's place as PI. Over this past summer (2002), Mark Robson, Nancy Finley (CACO) and Bryan Milstead (Network Coordinator) met at CACO to review the existing agreement and develop a new timeline for deliverables. (2) Dr. Robson has completed site visits and analysis for CACO and FIIS at this time.
- Scheduled FY 2003 Activities and Products: (1) Site visits will be made to the rest of the Coastal and Barrier Network parks, GATE, GEW, THST, ASIS and COLO in the fall and winter, 2002/03. (2) A final report will be completed for all network parks that includes current baseline conditions of contaminants in the parks as well as the results of an examination of historic information that may indicate past source discharges, spills and deposition areas. (3) A draft conceptual model identifying agents of change, stressors and responses associated with contaminants in the Network parks, will be developed and submitted in March 2003, as well as recommendations for candidate vital signs.

Task 10.3 Estuarine water quality monitoring-Identifying agents of change in the Network park.

- FY2002 Accomplishments: (1) An amendment to a cooperative agreement with the University of RI was established, to fund Task 1 of a larger proposal to develop techniques to monitor potential sources of nutrients in park watersheds. Task 1 of this project, funded with Network WRD funds, will conduct a baseline inventory of potential sources of nutrients within watersheds of each of the Network parks. This project will provide an inventory of recent changes in nutrient loading proxies at ten year intervals back to 1970, as well as interpretation for each park. A manual of procedures for updating this inventory at each location, including detailed data source guides, will be developed as part of the final deliverables. The following list of agents of change will be reviewed for each park:
    - Human population numbers derived from census tract data. Since the census tracts will not be perfectly aligned with watershed boundaries, this will be prorated on an area basis or corrected using more site specific detailed information on population distribution.
    - Human population served by municipal sewage treatment systems vs. individual on-site sewage treatment. These data will be collected from local sources.

- NPDES permits for point source discharges as well as sewage treatment plant monitoring records for N where they are available. These should be available from state environmental agencies and the plants themselves.
- Permitted water withdrawals for agriculture and domestic consumption. These data should be available from state sources.
- Fertilizer consumption. These data are available at the county level from the Fertilizer Institute and U.S. Dept. of Agriculture. This will be prorated for the watershed on the basis of agricultural land use.
- Livestock populations. These data are available at the county level from the Census of Agriculture. Again, will be prorated to the watershed on the basis of agricultural land area or more site specific information from Agricultural Extension agents knowledgeable about local practices.
- Land use inventories. This information is often more problematic that assumed because of differences in defining land use and a lack of field verification. The cooperators believe that NOAA C-CAP land cover data are available for all the parks and the Multi-Resolution Land Characteristics Consortium has analyzed 1991-92 land cover for all the parks as well. If any of the park watersheds are not available through C-CAP, the cooperators will work directly with the USGS National Land Cover Data, which provide land cover in the Anderson Level II classification at 30m by 30m pixel resolution. Either the USGS or the C-CAP data can be input directly to our ArcView GIS system using the ESRI software associated with C-CAP. The cooperators anticipate assembling an aggregated classification emphasizing major differences only. For example, because of the obvious importance of impervious surface in generating runoff, they may work with a simple scheme of high intensity developed, suburban or low intensity developed, field crops, pasture, forest, wetland, and open water. For three of the parks (Assateague, Gateway, and Cape Cod) they will also have an opportunity to compare the whole watershed land cover with an independent analysis, by Wilfred Rodriguez and Peter August of the University of Rhode Island Environmental Data Center, that is nearing completion. Their project has analyzed land cover data from 1976,1984, 1990-93, and 1999 for each of the three parks, but only for a 4 km wide buffer around the estuarine portion of each system. They will be comparing land cover in the buffer zone with environmental indicators in the water analyzed by the U.S. EPA EMAP program.
- Atmospheric deposition. Blaine Kopp of the USGS has already determined that wet deposition monitoring of direct nitrogen flux (as part of the NADP program) has been in place since the 1980's within three of the parks (Assateague, Cape Cod, and Acadia) and that monitoring sites are located close to Gateway and Boston Harbor Island. If the cooperators can not identify any independent monitoring stations close to the remaining parks, they will interpolate N deposition from the nearest sites.

Task 10.4 Hire staff tasked with organizing and administrating the Networks water quality monitoring component.

- This person will assist Network staff in the continued development of a Network water quality monitoring component. This will include writing annual reports, developing scopes of work, managing incoming deliverables from cooperators and setting up the review process for those deliverables, handling the review of new proposals, and other administrative tasks specific to the Network's water quality monitoring component.

III. Staffing

Bryan Milstead, Northeast Coastal and Barrier Network Coordinator
Sara Stevens, Northeast Coastal and Barrier Network Data Manager
Mark Duffy, Shoreline Change Workgroup leader (on detail from ASIS)
Chris Lea, Vegetation Mapping leader (on detail from ASIS)
Allison Hamel-LeBlanc, NPSpecies (cooperator)
Linda Fabre, Network Data Mining (cooperator)
Elizabeth Johnson, Northeast Region I&M Coordinator

Coastal and Barrier Network Technical Steering Committee:
Bryan Milstead NPS-University of Rhode Island
Sara Stevens NPS-University of Rhode Island
Elizabeth Johnson NPS-University of Rhode Island
Carl Zimmerman NPS-ASIS
Charles Rafkind NPS-COLO
George Frame, GATE
Allan O'Connell USGS-Pautuxent
Charles Roman NPS-University of Rhode Island
Hilary Neckles USGS-Augusta, ME
Howard Ginsberg USGS-University of Rhode Island
John Karish NPS-Penn State University
Mary Foley NPS-BOSO
Nancy Finley NPS-CACO
Glenn Gutenspergen USGS
P. A. Buckley USGS-University of Rhode Island

Coastal and Barrier Network Board of Directors
Michael Hill, ASIS
Maria Burks, CACO
Alec Gould, COLO
Barry Sullivan (Acting), FIIS
Mark Koenings, GATE
Vidal Martinez, GEWA/THST
Lorenza Fong, SAHI
Bryan Milstead, Network Coordinator
Elizabeth Johnson NPS-University of Rhode Island

IV. Public Interest Highlights

Rare Vegetation Communities Identified at George Washington Birthplace NM

During the 2002 field season at GEWA, VA Natural Heritage Program staff, conducting the field work for the park's vegetation mapping program, identified the occurrences of two globally rare communities. These two communities, the Coastal plain Dry Calcareous Forest/Woodland and the Non-Riverine Wet Harwood Forest natural communities, are both listed in the National Vegetation Classification with a G2 conservation rank.

New and Rare species found at Thomas Stone National Historic Site

In September 2001, May and June 2002, Brent Steury, an NPS Ecologist, from National Capital Parks-East, conducted a three day survey of vascular plants at Thomas Stone National Historic Site. During this survey he also gathered information on butterflies, damselflies, reptiles and amphibians as well as noteworthy records of breeding birds. These three days of survey effort added a total of 178 vascular plant species, including nine Maryland state listed species, 23 butterfly species, including one state listed species, 15 species of dragonflies (including one state listed species and one county record) and a damselfly, noteworthy records of breeding birds, and sightings of reptiles and amphibians, to the list of species known from THST.
*Note: Brent Steury was presented a star award for his efforts.

Record herpetological find at Fire Island National Seashore, Field season 2002

During the 2002 field season, a crew from the Wildlife Conservation Society, under a cooperative agreement to inventory amphibians and reptiles in four of the NCBN parks, recaptured a box turtle on FIIS that had been originally marked by J.T. Nichols in 1921. The same turtle had previously been discovered back in 1991. J.T. Nichols had described the turtle as mature, about 20 years old, when he first marked it, making the turtle at least 100 yrs old.

Inter-Agency Partnership Produces High Accuracy Elevation Survey at Cape Cod National Seashore

A cooperative scientific study designed to collect high accuracy digital elevation information and digital aerial photos in coastal parks was initiated on October 8th. Thirty-four gigabytes of elevation data were collected and 29,000 digital, aerial photos were taken at Cape Cod National Seashore by a group of scientists from NASA, USGS, and the National Park Service. This study is designed to give the National Park Service high-resolution elevation data in coastal and barrier island parks to a vertical accuracy of roughly 15-cm. A new type of LIDAR (Light Detection and Ranging) instrument known as EAARL (Experimental Advanced Airborne Research LIDAR), was used to collect the data. ASIS has a history of applying new technology in conjunction with NASA and USGS scientists to measure shoreline change. Mark Duffy of ASIS has been working to develop and implement cooperative programs between the National Park Service, NASA, and the USGS Coastal Research Center for collection, processing and

delivery of these data to all Network parks. As part of this cooperative program, Wayne Wright (NASA Goddard Space Flight Center) and Virg Rabine (NASA pilot) flew CACO on Tuesday, October 8, 2002. The National Park Service's Mark Duffy and Tim Smith (NPS GPS Coordinator) provided ground support and the NPS Inventory and Monitoring Program provided funding for this inter-agency effort. Trimble Navigation supplied the geodetic grade GPS equipment for the ground reference station. The cooperative relationship between the three agencies allowed the entire Cape Cod mission to be completed for a fraction of normal costs associated with a project of this scale. This program is of great benefit to the NPS, NASA, and USGS. The NPS acquires valuable monitoring data, while NASA utilizes parks and NPS supplied logistical support for developing and testing new remote sensing equipment, while the USGS continues to develop innovative processing and analysis techniques for these complex data sets. The cooperative program is scheduled to provide LIDAR surveys in selected Coastal and Barrier Network parks on an every other year interval to monitor changes in beach geomorphology.

V. Reports, Publications and Presentations (2002):

Reports:

- Coastal and Barrier Network Annual Administrative Report (FY00-FY01) and Work Plan(FY02)
- Coastal and Barrier Network Inventory Study Plan (Submitted to WASO December, 2001)
- Meeting minutes-Network Board of Directors Teleconference
- Coastal and Barrier Network Monitoring Program Handout-Meeting of the Networks, Denver, Co 2002.
- Draft report-Vegetation Classification of Thomas Stone National Historic Site, by Chris Lea
- Draft report-Candidate Variables for Monitoring Estuarine Nutrient Enrichment within the NPS Coastal and Barrier Network, by Blaine S. Kopp, Hilary A. Neckles, Charles T. Roman, Scott W. Nixon.
- Report on Floristic Inventory of THST, by Brent Steury.
- Dr. O'Connell has a manuscript in preparation for submission to the Natural Areas Journal on his work gathering voucher specimen information on vertebrates and vascular plants for the Northeast Region.

Presentations:

- Dr. Allan O'Connell prepared a poster on his inventory work titled " Voucher Specimens of Vertebrates and Vascular Plants Originating in Northeastern National Parks – Retrieval of Information and What Natural History Collections Can Tell Us About Biological Diversity". This poster was presented June 15, 2002 in Washington, D.C. at the National meeting of the Alliance of Natural Science Collections. Subsequently, the poster was selected to represent Patuxent Wildlife Research Center on October 13, 2002 in Baltimore, MD at the National Association of Environmental Journalists.
- May 2002, CHAL GIS Coordinator's meeting, Reston, VA, I&M Data Management,

Sara Stevens
- June 18, 2002 Coastal and Barrier Network Cooperator's Meeting, URI, The Network Monitoring Program, Bryan Milstead
- June 18, 2002 Coastal and Barrier Network Cooperator's Meeting, URI, I&M Data Management, Sara Stevens
- June 18, 2002 Coastal and Barrier Network Cooperator's Meeting, URI, Species and Habitats Data Mining Project, Linda Fabre
- June 18, 2002 Coastal and Barrier Network Cooperator's Meeting, URI, Coastal and Barrier Network Inventories, Beth Johnson
- July 2002, Gateway National Park, presented to park staff, Monitoring Program/Data Management, Bryan Milstead and Sara Stevens
- July 2002, Teleconference of the Network Board of Directors, Network Monitoring Program update, Bryan Milstead
- August 2002 Denver, CO, I&M Meeting of networks (Bryan Milstead)

Publications:
- NY Times, Sunday June 9, 2002. " A Snake Census on Fire Island" by Laurie Nadel
- The Fire Island News, June 21-27, 2002 "Of Special Concern: At-Risk Turtle Caught in Catch-22 by Suzanne McCoy

VI. Status of Park Vital Signs Monitoring

Coastal and Barrier Network 2001	Air Quality	Water Quality	Water Quantity	Geologic Resources	Plants	Animals	Landscape Characteristics
Planning and Design							
# parks monitoring w/ NRC funding	8	8	0	8	8	8	8
# parks monitoring w/ other funding	1	6	0	4	4	5	0
Protocols Implemented							
# parks monitoring w/ NRC funding	0	0	0	0	0	0	0
# parks monitoring w/ other funding	1	4	0	2	3	5	0
Analysis/Synthesis Available							
# parks monitoring w/ NRC funding	0	0	0	0	0	0	0
# parks monitoring w/ other funding	1	3	0	0	2	5	0

Note: Air (CACO), Water (CACO,GATE, FIIS, ASIS, COLO, GEWA), GEO (CACO,ASIS,GATE, FIIS), Plants (ASIS, CACO, GATE, COLO), Animals (ASIS, CACO, GATE, FIIS, COLO).

VII. Budget

Budget Summary

FY02 Admin Report Network: Northeast Coastal and Barrier

Category: 1_Income

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Inventory Funds	$248,300.00	I&M - Biol. Inventory $$		
Monitoring Funds	$776,500.00	I&M - VS Monitoring $$		
Regional Coordinator Salary	$21,250.00	I&M - VS Monitoring $$		
Veg. Mapping Funds	$90,000.00	Veg. Mapping Program		
USFS NH/Frament; AirPhotos; GATE & SAHI	$6,611.00	Other Partners		USFW Cost share total NPS=$14,402; CBN cost= $6611
Water Quality Funds	$90,000.00	WRD - WQ Monitoring		
Audobon Society: TR Sanctuary/Pelkowski; Bird Inv.; SAHI	$3,500.00	Other Partners		$7500 CBN Match
FirePro Funds	$75,002.00	Fire Program/FirePro		total=$75,002 CBN + $141,730 MID + 4,184 SHEN = $220,916
CESU Match URI/CESU/Arty; Student RA Shoreline Change	$22,479.00	Park or Regional $$		Modification #12; CBN Match =
Subtotal	*$1,333,642.00*			

Category: 2_Personnel

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Network Coordinator Salary	$28,731.00	I&M - VS Monitoring $$	NPS	
Regional Coordinator Salary	$21,250.00	I&M - VS Monitoring $$	NPS	
Galgano Salary ASIS Backfill for Duffy	$35,785.00	I&M - VS Monitoring $$	NPS	
Data Manager Salary	$46,634.00	I&M - VS Monitoring $$	NPS	
Strum Salary ASIS Backfill for Lea	$19,340.00	I&M - VS Monitoring $$	NPS	
Subtotal	*$151,740.00*			

Category: 3_Coop. Agreements

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
USFS NH/Frament; AirPhotos; GATE & SAHI	$6,611.00	Fire Program/FirePro	Other Federal	USFW Cost share total NPS=$14,402; CBN cost= $6611
NatureServe/Sneddon; Veg Map CACO	$40,000.00	Veg. Mapping Program	Other non-Federal	
NCState/Devine; Veg Map; COLO, THST, & GEWA	$52,110.00	Fire Program/FirePro	Univ_Non-CESU	Total Project =$152,110, CBN Cost=$52110
NPS-GRD/Melanie R.; Shoreline Intern. ASIS	$6,800.00	I&M - VS Monitoring $$	NPS	

Category: 3_Coop. Agreements (continued)

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
NY Nat. Her./Van Leuven; Veg. Map; GATE SAHI	$42,209.00	Veg. Mapping Program	Other non-Federal	
PennState/Tiffney; NRBib CBN	$8,317.00	I&M - VS Monitoring $$	Univ_Non-CESU	
Sterling College/Monz; Visitor Impact Monitoring	$37,087.00	I&M - VS Monitoring $$	Univ_Non-CESU	
TR Sanctuary/Pelkowski; Bird Inv.; SAHI	$7,500.00	I&M - Biol. Inventory $$	Other non-Federal	$3500 Audubon Match
URI/CESU/Arty; Student RA Shoreline Change	$20,000.00	I&M - VS Monitoring $$	University-CESU	Modification #12; CESU Match = $22479
URI/CESU/James-Pirri; Salt Marsh Monitoring	$221,643.00	I&M - VS Monitoring $$	University-CESU	Modification #15
URI/CESU/Nixon; Estuarine Agents of Change; CBN	$90,000.00	WRD - WQ Monitoring	University-CESU	Modification #19 CBN=$90k NET=$40,640 Sum=$130,640
USFS NH/Frament; AirPhotos; GATE & SAHI	$7,791.00	Veg. Mapping Program	Other Federal	USFW Cost share
Wild. Cons. Soc./Behler; Herp Inv.;GATE FIIS SAHI	$1,432.00	I&M - VS Monitoring $$	Other non-Federal	Vehicles and Housing $13,708 l funds $1,432 m funds
USFS NH/Frament; AirPhotos; GATE & SAHI	$6,611.00	Other Partners	Other Federal	USFW Cost share total NPS=$14,402; CBN cost= $6611
TR Sanctuary/Pelkowski; Bird Inv.; SAHI	$3,500.00	Other Partners	Other non-Federal	$7500 CBN Match
URI/CESU/Arty; Student RA Shoreline Change	$22,479.00	Park or Regional $$	University-CESU	Modification #12; CBN Match =
VCW Univ./Pagels; Mam. Inv.; BOWA APCO PETE	$66,298.00	I&M - VS Monitoring $$	Univ_Non-CESU	FY02 MID owes CBN $66,298
URI/EDC/Fabre; Data Mining	$100,271.00	I&M - VS Monitoring $$	Univ_Non-CESU	
Univ. Richmond/Mitchell/Herps VA Parks	$110,209.00	I&M - Biol. Inventory $$	Univ_Non-CESU	FY02 MID owes CBN $110,209
Wm.&Mary/Bradshaw; Bird Inv.; RICH PETE BOWA FRSP	$65,955.00	I&M - Biol. Inventory $$	Univ_Non-CESU	FY02 MID owes CBN $65,955
Wm.&Mary/Bradshaw; Bird Inv.; COLO GEWA THST ASIS	$50,928.00	I&M - Biol. Inventory $$	Univ_Non-CESU	
Wm. & Mary/Rafkind; Plant Museum Vouchers; COLO	$1,200.00	I&M - VS Monitoring $$	Univ_Non-CESU	
Wild. Cons. Soc./Behler; Herp Inv.;GATE FIIS SAHI	$13,708.00	I&M - Biol. Inventory $$	Other non-Federal	Vehicles and Housing $13,708 l funds $1,432 m funds
USGS/St. Petersburg/Brock; Lidar Data CBN	$65,000.00	I&M - VS Monitoring $$	USGS	FY01 55k FY02 65k FY03 est. 55k FY04 ? FY05 ?
USGS Patuxent/O'Connell; CBN Vouchers Vert. and Plants	$10,250.00	I&M - VS Monitoring $$	USGS	
USGS Patuxent/Neckles; Estuarine Eutrophication	$14,030.00	I&M - VS Monitoring $$	USGS	
Univ. Richmond/Mitchell/Herp. Recon.	$5,000.00	I&M - VS Monitoring $$	Univ_Non-CESU	FY02 ERM owes CBN $5000 total =$5552 FY02 ERM owes CBN $5000
Subtotal	*$1,076,939.00*			

Category: 4_Contracts

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Kucera/Easterbrook; AirPhotos; COLO, THST, & GEWA	$16,281.00	Fire Program/FirePro	Other non-Federal	Total VA parks=$46,432, CBN cost=$16,281
Subtotal	*$16,281.00*			

Category: 5_Operations/Equipm

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
CBN; Water Samplers for Neckles Project	$39,170.00	I&M - VS Monitoring $$	NPS	
Equipment	$5,139.00	I&M - VS Monitoring $$	NPS	
PCS Move for WBM	$18,540.00	I&M - VS Monitoring $$	NPS	
Subtotal	*$62,849.00*			

Category: 6_Travel

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Travel	$25,833.00	I&M - VS Monitoring $$	NPS	
Subtotal	*$25,833.00*			

Budget Analysis

Analysis of Expenses by Expense Type

Funding Source	*Total $$*	*NPS*	*USGS*	*Other Federal*	*Univ.-CESU*	*Univ_Non-CESU*	*Other non-Federal*
Fire Program/FirePro	$75,002			$6,611		$52,110	$16,281
I&M - Biol. Inventory	$248,300					$227,092	$21,208
I&M - VS Monitoring $$	$797,750	$247,222	$89,280		$241,643	$218,173	$1,432
Other Partners	$10,111			$6,611			$3,500
Park or Regional $$	$22,479				$22,479		
Veg. Mapping Program	$90,000			$7,791			$82,209
WRD - WQ Monitoring	$90,000				$90,000		
Totals	$1,333,642	$247,222	$89,280	$21,013	$354,122	$497,375	$124,630

Analysis of Expenses by Category

Funding Source	*Total $$*	*Personnel:*	*Coop Agree.*	*Contracts*	*Operations/Equip.*	*Travel*	*Other*
Fire Program/FirePro	$75,002		$58,721	$16,281			
I&M - Biol. Inventory	$248,300		$248,300				
I&M - VS Monitoring $$	$797,750	$151,740	$557,328		$62,849	$25,833	
Other Partners	$10,111		$10,111				
Park or Regional $$	$22,479		$22,479				
Veg. Mapping Program	$90,000		$90,000				
WRD - WQ Monitoring	$90,000		$90,000				

Totals	$1,333,642	$151,740	$1,076,939	$16,281	$62,849	$25,833

Expense Totals By Category

Category	*SubTotal*	*Percent*
2_Personnel	$151,740	11.38%
3_Coop. Agreements	$1,076,939	80.75%
4_Contracts	$16,281	1.22%
5_Operations/Equipment	$62,849	4.71%
6_Travel	$25,833	1.94%
	$1,333,642	

Budget Summary

FY03 Work Plan — Network: Northeast Coastal and Barrier

Category: 1_Income

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Monitoring Funds	$776,500.00	I&M - VS Monitoring $$		
FY02 ERM owes CBN $5000	$5,000.00	I&M - Biol. Inventory $$		FY02 CBN paid Univ. Richmond/Mitchell/Herp. Recon.
FY02 MID owes CBN $65,955	$65,955.00	Other Partners		FY02 CBN PAID Wm.&Mary/Bradshaw; Bird Inv.; RICH PETE BOWA FRSP APCO
FY02 MID owes CBN $66,298 Pd. $482 in FY03	$482.00	Other Partners		FY02 CBN PAID VCW Univ./Pagels; Mam. Inv.; BOWA
FY02 MID owes CBN $110,209	$110,209.00	Other Partners		FY02 CBN PAID Univ. Richmond/Mitchell/Herps VA Parks
Water Quality Funds	$90,000.00	WRD - WQ Monitoring		
Regional Coordinator Salary	$21,250.00	I&M - VS Monitoring $$		
Reg. GIS funds used to pay CBN EDC Personnel	$52,000.00	Park or Regional $$		FY03 trade for new CA to pay EDC GIS person (56k)
Inventory Funds	$241,000.00	I&M - Biol. Inventory $$		
Subtotal	*$1,362,396.00*			

Category: 2_Personnel

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*

Regional Coordinator Salary	$3,534.00	I&M - VS Monitoring $$	NPS	additional charge for Reg. Coord.
Network Coordinator Salary	$82,914.00	I&M - VS Monitoring $$	NPS	GS12/2 4.5mo GS12/3 7.5 mo GS12/2 3.5 mo GS12/3 8.5 mo
Data Manager Assistant Salary (Deb)	$49,000.00	I&M - VS Monitoring $$	NPS	GS11/1 12/16/02 start GS11/1 8 months

Category: 2_Personnel (Continued)

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Data Manager Salary	$57,110.00	I&M - VS Monitoring $$	NPS	GS9/1 2.5 mo GS11/1 9.5 mo.
Data Manager Salary .25 fte CACO	$25,000.00	I&M - VS Monitoring $$	NPS	GS11/1 2 mo
USGS/Neckles/Estuarine Nutrients Techs	$30,000.00	I&M - VS Monitoring $$	NPS	GATE GS7 24 wks. GATE & COLO 2-GS4 12 wks.
Geomorphologist/GIS Salary	$61,225.00	I&M - VS Monitoring $$	NPS	GS11/7 Jan. 1 start
Strum Salary ASIS Backfill for Lea	$10,240.00	I&M - Biol. Inventory $$	NPS	from Carl Zimmerman
Regional Coordinator Salary	$21,250.00	I&M - VS Monitoring $$	NPS	25% of 85k
Galgano Salary ASIS Backfill for Duffy	$56,095.00	I&M - VS Monitoring $$	NPS	from Carl Zimmerman
FOBU/Santucci/Paleo Inventory GS5 Tech	$2,800.00	I&M - Biol. Inventory $$	NPS	
Subtotal	*$399,168.00*			

Category: 3_Coop. Agreements

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
?/? ASIS Herps	$60,000.00	I&M - Biol. Inventory $$		
?/? Compile FISH Data FIIS	$10,000.00	I&M - Biol. Inventory $$		
USGS/Neckles/Estuarine Nutrients Phase II	$15,154.00	I&M - VS Monitoring $$	USGS	Tot. =$105,154 split between WRD $90k & Monitoring
Sterling College/Monz/ VIM phaseII	$62,767.00	I&M - VS Monitoring $$	Univ_Non-CESU	
USGS/Neckles/Estuarine Nutrients Phase II	$90,000.00	WRD - WQ Monitoring	USGS	Tot. =$105,154 split between WRD $90k & Monitoring
URI/CESU & EDC Shoreline Change Arty	$30,000.00	I&M - VS Monitoring $$	University-CESU	Arty Rodriguez Student CESU
URI/Wang RS Veg Map, Eel grass, Habitats	$60,000.00	Other Partners	University-CESU	New project FY03
Sterling College/Monz/ VIM phaseI Mod.	$4,184.00	I&M - VS Monitoring $$	Univ_Non-CESU	Increase to cover miscalculated benefits
WCS/Herps GATE FIIS	$35,000.00	I&M - Biol. Inventory $$	Other non-Federal	
?/? Mammal Inventory GATE & FIIS	$60,000.00	I&M - Biol. Inventory $$		
NatureServe/Crosswalks GATE SAHI	$15,000.00	I&M - VS Monitoring $$	Other non-Federal	
URI/EDC fund GIS position for CBN & NET	$56,000.00	I&M - VS Monitoring $$	University-CESU	Trade for See 52k income; FY03 trade; FY04 Split with NET
?/? Odontate Inventory ASIS THST GEWA COLO	$60,000.00	I&M - VS Monitoring $$		
?/? Compile Bird Data GATE & FIIS	$20,000.00	I&M - Biol. Inventory $$		
?/? Odontate Inventory GATE & FIIS	$60,000.00	Other Partners		Funds Repaid from other Network
?/? Mammal Inventory ASIS	$56,646.00	Other Partners		Funds Repaid from other Network

USGS/St. Petersburg/Brock; Lidar Data CBN		$65,000.00	I&M - VS Monitoring $$	USGS	FY01 55k FY02 65k FY03 est. 55k FY04 ? FY05 ?
URI/EDC Allison, Linda, Bradley CA		$52,000.00	Park or Regional $$	University-CESU	Paid with Regional Funds FY03 only in Trade
	Subtotal	*$811,751.00*			

Category: 4_Contracts

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Database development consultant	$1,500.00	I&M - VS Monitoring $$	NPS	
Subtotal	*$1,500.00*			

Category: 5_Operations/Equipm

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Equipment	$15,817.00	I&M - VS Monitoring $$	Other non-Federal	
WCS/Herps GATE FIIS Housing Costs	$15,000.00	I&M - Biol. Inventory $$	NPS	
Equipment	$17,960.00	I&M - Biol. Inventory $$	Other non-Federal	
USGS/Neckles/Estuarine Nutrients Housing	$15,000.00	I&M - VS Monitoring $$	NPS	
USGS/Neckles/Estuarine Nutrients Vehicles	$15,000.00	I&M - VS Monitoring $$	NPS	
PCS Move for WBM	$8,000.00	I&M - VS Monitoring $$	NPS	
WCS/Herps GATE FIIS Vehicle Costs	$15,000.00	I&M - Biol. Inventory $$	NPS	
Subtotal	*$101,777.00*			

Category: 6_Travel

Description	*$ Amount*	*$$ Source*	*Expense Type*	*Comments*
Travel	$45,000.00	I&M - VS Monitoring $$	NPS	
USGS/Neckles/Estuarine Nutrients Travel	$3,200.00	I&M - VS Monitoring $$	NPS	
Subtotal	*$48,200.00*			

Budget Analysis

Analysis of Expenses by Expense Type

Funding Source	Total $$	NPS	USGS	Other Federal	Univ.-CESU	Univ_Non-CESU	Other non-Federal
I&M - Biol. Inventory	$246,000	$43,040					$52,960
I&M - VS Monitoring $$	$797,750	$473,828	$80,154		$86,000	$66,951	$30,817
Other Partners	$176,646				$60,000		
Park or Regional $$	$52,000				$52,000		
WRD - WQ Monitoring	$90,000		$90,000				
Totals	$1,362,396	$516,868	$170,154		$198,000	$66,951	$83,777

Analysis of Expenses by Category

Funding Source	Total $$	Personnel:	Coop Agree.	Contracts	Operations/Equip.	Travel	Other
I&M - Biol. Inventory	$246,000	$13,040	$185,000		$47,960		
I&M - VS Monitoring $$	$797,750	$386,128	$308,105	$1,500	$53,817	$48,200	
Other Partners	$176,646		$176,646				
Park or Regional $$	$52,000		$52,000				
WRD - WQ Monitoring	$90,000		$90,000				
Totals	$1,362,396	$399,168	$811,751	$1,500	$101,777	$48,200	

Expense Totals By Category

Category	SubTotal	Percent
2_Personnel	$399,168	29.30%
3_Coop. Agreements	$811,751	59.58%
4_Contracts	$1,500	0.11%
5_Operations/Equipment	$101,777	7.47%
6_Travel	$48,200	3.54%
	$1,362,396	